

Title (en)

Cobalt substituted chromium oxide compositions, their preparation and their use as catalysts and catalyst precursors

Title (de)

Kobalt-substituiertes Chromoxid enthaltende Zusammensetzungen, ihre Herstellung und ihre Verwendung als Katalysator und Katalysatorvorläufer

Title (fr)

Composition d'oxyde de chrome a substitution cobalt, préparation de ces compositions et utilisation de ces compositions en tant que catalyseurs et précurseurs de catalyseurs

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Application

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Abstract (en)

[origin: WO2004018093A2] A crystalline alpha-chromium oxide where from about 0.05 atom % to about 6 atom % of the chromium atoms in the alpha-chromium oxide lattice are replaced by trivalent cobalt (Co⁺³) atoms is disclosed. Also disclosed is a chromium-containing catalyst composition comprising as a chromium-containing component the crystalline cobalt-substituted alpha-chromium oxide; and a method for preparing a composition comprising the crystalline cobalt-substituted alpha-chromium oxide. The method involves (a) co-precipitating a solid by adding ammonium hydroxide to an aqueous solution of a soluble cobalt salt and a soluble trivalent chromium salt that contains at least three moles of nitrate per mole of chromium in the solution and has a cobalt concentration of from about 0.05 mole % to about 6 mole % of the total concentration of cobalt and chromium in the solution; and after at least three moles of ammonium per mole of chromium in the solution has been added to the solution, (b) collecting the co-precipitated solid formed in (a); (c) drying the collected solid; and (d) calcining the dried solid. Also disclosed is a chromium-containing catalyst composition comprising a chromium-containing component prepared by treating the crystalline cobalt-substituted alpha-chromium oxide with a fluorinating agent; and a process for changing the fluorine distribution (i.e., content and/or arrangement) in a hydrocarbon or halogenated hydrocarbon in the presence of a catalyst. The process involves using as the catalyst a composition comprising the crystalline cobalt-substituted alpha-chromium oxide and/or the treated cobalt-substituted alpha-chromium oxide.

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